REMARKS

Claims 1 and 14 have been amended. Claims 1-24 are currently pending and presented for examination. Applicants respectfully request reconsideration and allowance of the pending claims in view of the foregoing amendments and the following remarks.

Response to rejections under Section 102:

Claims 1-6 and 14 stand rejected under 35 U.S.C. § 102(b), the Examiner contending that these claims are anticipated by Weihs (USPN 6,534,194). Claims 1-9, 11, 12, 14, 21, 22 and 24 stand rejected under 35 U.S.C. § 102(b), the Examiner contending that these claims are anticipated by Kear (USPN 4,250,229).

Applicants have amended independent claims 1 and 14 to clarify that the unitary consumable insert comprises a metal-comprising material and a melting point depressant material, and that the melting point depressant material has a concentration that is greater proximate a center region of the consumable insert than proximate an exterior surface region of the consumable insert. Support for this amendment can be found at page 3 lines 1-14, among other places.

Applicants note that independent claims 7 and 22 recite particles of a material exhibiting a ductility of less than 18% tensile elongation contained by the sheath. Support for this limitation can be found at page 5 line 31 – page 6 line 21.

Claims 1-6 and 14

The Examiner apparently reads Weihs as disclosing Applicants' claimed consumable insert comprising a sheath having an upper and lower layer of Ni and a melting point depressant

(Ni and B) contained therebetween. Applicants respectfully disagree with the Examiner's reading of Weihs and respectfully submit that Weihs discloses a reactive foil 44 that has no melting point depressant, let alone a melting point depressant having a concentration that is greater proximate a center region of the insert than proximate an exterior surface region of the insert.

The Weihs reactive foil 44 comprises an assembly 20 that is inserted into a jacket 21. See e.g. Fig. 1. The assembly comprises alternating layers of materials that can exothermically react e.g. an assembly of alternating layers of Ni or nickel alloy foil and Al or Al alloy foil. Col. 3 lines 29-36. The assembly 20 is then inserted into a jacket 21 made of a metal or alloy such as copper. Col. 3 lines 43-53. In use, referring to Figure 5, the reactive foil 44 is positioned between joining materials 52 to form a sandwich-like structure. Col. 5 lines 32-35. The sandwich 44, 52 is then positioned between the bulk materials 50 that are to be joined. Col. 5 lines 35-38. Once arranged in this bulk material – joining material – reactive foil – joining material – bulk material sandwich, a heat stimulus is applied to the reactive foil 44 to initiate rapid and intense heat sufficient to melt the joining materials 52 and cause the joining materials 52 to join with the bulk material 50. Col. 5 lines 48-56.

If the Examiner reads the Weihs reactive foil 44 as Applicants claimed consumable insert, then Applicants respectfully submit that the reactive foil 44 does not comprise Applicants' claimed melting point depressant, but rather teaches away by teaching an exothermic material. Alternatively, if the Examiner reads the Weihs joining material 52 as Applicants claimed consumable insert (which Applicants respectfully consider a more proper reading), then Applicants respectfully submit that although the joining material 52 comprises a melting point depressant of Ni-B film (col. 5 lines 25-31), there is no teaching or suggestion that the melting point depressant that is greater proximate a center region of the insert than proximate an exterior surface region of the insert, as recited in independent claims 1 and 14.

Claims 1-9, 11, 12, 14, 21, 22 and 24

The Examiner apparently reads Kear as disclosing Applicants' claimed consumable insert comprising a sheath having an upper and lower layer of Ni and a melting point depressant (Ni based superalloy with B) contained therebetween. Applicants respectfully disagree with the Examiner's reading of Kear and respectfully submit that Kear discloses a braze material comprising an amorphous metal structure 10 that has no melting point depressant that is greater proximate a center region of the insert than proximate an exterior surface region of the insert.

The Kear brazing/bonding interlayer alloy comprises an amorphous metal structure. Col. 3 lines 29-33, Col. 3 lines 42-52, Col. Col 5 lines 65-67, Col. 7 lines 37-38. Kear goes into significant detail in describing the term "amorphous" and distinguishing it from the term "crystalline" Col. 2 lines 32-67. Kear teaches that by using an amorphous metal structure, homogenous bonding/brazing interlayers can be formed and conveniently shaped and handled. Col. 4 lines 5-11. Kear further teaches that the bonding/brazing interlayer will comprise an amorphous strata portion 10 and an crystalline strata portion 12. Col. 8 lines 38-47.

While Kear does disclose that the bonding/brazing interlayer may comprise a metal such a Ni and may also contain a melting point depressant such as boron or silicon, Col. 3 lines 64-65, Col. 5 lines 48-62, Applicants respectfully submit that there is no teaching or suggestion that the melting point depressant that is greater proximate a center region of the insert than proximate an exterior surface region of the insert, as recited in independent claims 1 and 14. Applicants also respectfully submit that there is no teaching or suggestion that the consumable insert comprising a sheath of a metal-comprising material formed to a desired ribbon shape and particles of a material exhibiting a ductility of less than 18% tensile elongation contained by the sheath, as recited in independent claims 7 and 22.

Response to rejections under Section 103:

Claims 15-20 stand rejected under 35 U.S.C. § 103, the Examiner contending that these claims are obvious over Kear in view of what would have been obvious to one of ordinary skill in the art at the time of the inventions. Claims 1, 5-13 and 22-24 stand rejected under 35 U.S.C. § 103, the Examiner contending that these claims are obvious over Grossklaus (USPAP 2004/0084423) in view of Wissler (USPN 4,448,853).

Claims 15-20

As explained in connection with the Section 102 rejection response, while Kear does disclose that the bonding/brazing interlayer may comprise a metal such a Ni and may also contain a melting point depressant such as boron or silicon, Col. 3 lines 64-65, Col. 5 lines 48-62, Applicants respectfully submit that there is no teaching or suggestion that the melting point depressant that is greater proximate a center region of the insert than proximate an exterior surface region of the insert, as recited in independent claim 14.

Claims 1, 5-13 and 22-24

The Examiner apparently reads Grossklaus as disclosing Applicants' claimed consumable insert comprising a sheath filled with a powder containing a melting point depressant (MCrAlY powder or Ni superalloy with Si and/or B), and that Wissler teaches ribbons and flat tubes as well as formation of ribbon by bonding foils and flattening tubes. While Applicants generally agree with the Examiner's reading of Grossklaus, Applicants respectfully submit that the melting point depressant is Si and/or B powder, the Ni superalloy is the base metal to be brazed/bonded, and the MCrAlY is a rub coating optionally applied to the Ni superalloy.

While Grossklaus, like Kear, does disclose that the bonding/brazing material may comprise a metal such a Ni and may also contain a melting point depressant such as boron or silicon, Applicants respectfully submit that there is no teaching or suggestion that the melting point depressant that is greater proximate a center region of the insert than proximate an exterior surface region of the insert, as recited in independent claim 1. Applicants also respectfully submit that there is no teaching or suggestion that the consumable insert comprising a sheath of a metal-comprising material formed to a desired ribbon shape and particles of a material exhibiting a ductility of less than 18% tensile elongation contained by the sheath, as recited in independent claim 7 and 22.

Conclusion

For the foregoing reasons, it is respectfully submitted that the rejections set forth in the outstanding Office Action are inapplicable to the present drawings and claims. Please grant any extensions of time required to enter this paper. The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper, including the fees specified in 37 C.F.R. §§ 1.16 (c), 1.17(a)(1) and 1.20(d) for total independent claims in excess of 3, or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

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